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AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. APPLN. NO. 10/053,597

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): An adhesive film comprising:

(i) a substrate layer, which comprises a thermoplastic resin, and

(ii) an adhesive layer, which comprises an olefin copolymer, wherein the olefin copolymer comprises polymerization units of at least two olefins selected from the group consisting of ethylene and α -olefins having 3 to 20 carbon atoms, and the olefin copolymer satisfies the requirements:

(a) the olefin copolymer has neither a peak of crystal melting- enthalpy ~~of not less greater than 1 J/g~~, nor a peak of crystallization enthalpy ~~of not less greater than 1 J/g~~ in a differential scanning calorimetry, and

(b) a molecular weight distribution of the olefin copolymer, M_w/M_n , is not more than 3.

2. (original): The adhesive film according to Claim 1, wherein an intrinsic viscosity $[\eta]$ of the olefin copolymer is from 0.5 to 10 dl/g.

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3. (previously presented): The adhesive film according to Claim 1, wherein the olefin copolymer satisfies a requirement that an X defined by the following formula (1) is not less than 0.020, wherein

$$X = [A(T2M) - A(T2C)] / [(T2A - T2B)] \quad (1)$$

(1) T2A is a T2 relaxation time obtained from a pulse NMR measurement of one polypropylene resin selected from the group consisting of the following (A) to (C);

(2) T2B is a T2 relaxation time obtained from a pulse NMR measurement of the olefin copolymer;

(3) A(T2M) is a value obtained through a definite integration of a curve based on a third regression equation within a range of $Pa = 0 \sim 1$, wherein the curve is obtained in a manner such that respective T2 relaxation times of the olefin copolymer, the above-defined polypropylene resin and a resin composition comprising the olefin copolymer and said polypropylene resin are plotted on the ordinate, and a weight ratio (Pa) of the olefin copolymer in the resin composition is plotted on the abscissa; and

(4) A(T2C) is a value obtained through a definite integration of a curve based on a third regression equation within a range of $Pa = 0 \sim 1$, wherein the curve is obtained in a manner such that respective T2 relaxation times expressed by T2C (Pa), which is found from the following

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formula (2) using the T2A and T2B, are plotted on the ordinate, and a weight ratio (Pa) of the olefin copolymer in the resin composition is plotted on the abscissa:

(A) a propylene polymer, which has a melt flow rate of 12.0 ± 3.0 g/10 min. at 230°C under a load of 2.16 kg, and which shows a main peak position (melting point) of $160 \pm 3^{\circ}\text{C}$ in a crystal melting measured- using a differential scanning calorimeter (DSC), and shows a crystal melting enthalpy of 100 ± 5 J/g measured using a differential scanning calorimeter (DSC),

(B) a propylene-ethylene copolymer, which has a melt flow rate of 3.0 ± 0.5 g/10 min. at 230°C under a load of 2.16 kg, and which shows a main peak position (melting point) of $145 \pm 2^{\circ}\text{C}$ in a crystal melting measured- using a differential scanning calorimeter (DSC), and shows a crystal melting calorie enthalpy of 87 ± 5 J/g measured- using a differential scanning calorimeter (DSC), and

(C) a propylene-ethylene copolymer, which has a melt flow rate of 1.0 ± 0.6 g/10 min. at 230°C under a load of 2.16 kg, and which shows a main peak position (melting point) of $135 \pm 2^{\circ}\text{C}$ in a crystal melting measured- using a differential scanning calorimeter (DSC), and shows a crystal melting enthalpy of 60 ± 5 J/g measured- using a differential scanning calorimeter (DSC),

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$$T2C(Pa) = 1/[PvA(Pa)/T2A + (1 - PvA(Pa))/T2B] \quad (2)$$

wherein T2A and T2B are as defined above, and PvA(Pa) is a numerical value defined by the following formula (3), wherein

$$PvA(Pa) = VA \times (1 - Pa)/VC(Pa) \quad (3)$$

(1) VA is a volume ratio of components measured within a range of 70 ~ 150 μ sec. in a free induction decay (FID) obtained from a pulse NMR measurement of the polypropylene resin; and

(2) VC (Pa) is a volume ratio of components measured within a range of 70 ~ 150 μ sec. in a free induction decay (FID) obtained from a pulse NMR measurement of the resin compositions different in the composition.

4. (original): The adhesive film according to Claim 3, wherein the olefin copolymer satisfies a requirement that the X defined by the formula (1) is not more than 0.040.

5. (previously presented): The adhesive film according to Claim 1, wherein the olefin copolymer satisfies a requirement that an elastic recovery (S) defined by the following formula (4) is from 70 to 100%,

Elastic recovery S(%)

= stress-residual deformation recovery \times 100/

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stretch deformation (4)

wherein the stress-residual deformation recovery and the stretch deformation are those obtained from a hysteresis curve of a resin composition comprising 70 parts by weight of the olefin copolymer and 30 parts by weight of one polypropylene resin selected from the group consisting of the following (B) and (C), provided that at least one resin composition satisfies the above-defined requirement,

(B) a propylene-ethylene copolymer, which has a melt flow rate of 3.0 ± 0.5 g/10 min. at 230°C under a load of 2.16 kg, and which shows a main peak position (melting point) of $145 \pm 2^{\circ}\text{C}$ in a crystal melting measured- using a differential scanning calorimeter (DSC), and shows a crystal melting enthalpy of 87 ± 5 J/g measured- using a differential scanning calorimeter (DSC), and

(C) a propylene-ethylene copolymer, which has a melt flow rate of 1.0 ± 0.6 g/10 min. at 230°C under a load of 2.16 kg, and which shows a main peak position (melting point) of $135 \pm 2^{\circ}\text{C}$ in a crystal melting measured- using a differential scanning calorimeter (DSC), and shows a crystal melting enthalpy of 60 ± 5 J/g measured- using a differential scanning calorimeter (DSC).

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6. (original): The adhesive film according to Claim 1, wherein the adhesive layer comprises the olefin copolymer and a thermoplastic resin.

7. (original): The adhesive film according to Claim 1, wherein the adhesive layer comprises the olefin copolymer and a crystalline polyolefin resin.